

	91		150
P-PvArc4-417775-FL	ATTGTTT... .CACCTACAA	TGATAATATA TTAAAAAGTG	AACTTTAAAT
P-PvArc3-417683-FL	ATTGTTT... .CACCTACAA	TGATAATATA TTAAAAAGTG	AACTTTAAAT
P-Pv-Arc5-FL	ATTTTTTTTCA CATACAATTA	TGATAATATA TTAAAAAGTG	AACTTTAAAT
	391		440
P-PvArc4-417775-FL	TAATTTACA. .... .AGTTAAATT	AATTCAGCTT GTCTCCTTGA	
P-PvArc3-417683-FL	TAATTTACA. .... .AGTTAAATT	AATTCAGCTT GTCTCCTTGA	
P-Pv-Arc5-FL	TAATTTACAA TATATAGATT	CAGTTAAATC AATTCAGCTT	GTCTCCTTGA
	801		850
P-PvArc4-417775-FL	TGTTTATGCT CTTTTTCGGAA	TTAATTAAGT TTTAGTTGTA	ATTGTAATAA
P-PvArc3-417683-FL	TGTTTATGCT CTTTTTCGGAA	TTAATTAAGT TTTAGTTGTA	ATTGTAATAA
P-Pv-Arc5-FL	TGTTT..... .		.CTGTAATAA
	901		950
P-PvArc4-417775-FL	TTAGTCACGA GTGTGTATCC	TCACCCCTCA CAAACAACAT	TTCAAGAAAA
P-PvArc3-417683-FL	TTAGTCACGA GTGTGTATCC	TCACCCCTCA CAAACAACAT	TTCAAGAAAA
P-Pv-Arc5-FL	CTAGTCATGA G..... .	CACCACTCA GAGACAAGAT	TTCAAGAAAA
	1351		1400
P-PvArc4-417775-FL	ATA..... .AAATT	TTATAAAAAAG GGAAATCAA	ATTAGAATTT
P-PvArc3-417683-FL	ATA..... .AAATT	TTATAAAAAAG GGAAATCAA	ATTAGAATTT
P-Pv-Arc5-FL	ATATATAATA TATACAATTA	AATAAAAAAG GGAAATCAA	ATTAGAATTT
	1751		1800
P-PvArc4-417775-FL	CGTTGTTTGT TAATTGTTAA	TTTTATATTA TTATTTCTCC	CTCAAATAAT
P-PvArc3-417683-FL	CGTTGTTTGT TAATTGTTAA	TTTTATATTA TTATTTCTCC	CTCAAATAAT
P-Pv-Arc5-FL	CGTTGTTTAA TAATTGTTAA	TTTGGAGTT. .... .	...GAATAAT
	1801		1850
P-PvArc4-417775-FL	ATTATAAAAG ATAATGATTC	.....GATT TTGCATTTGT	TGTTGTATAA
P-PvArc3-417683-FL	ATTATAAAAG ATAATGATTC	GATTTTGATT TTGCATTTGT	TGTTGTATAA
P-Pv-Arc5-FL	AAAATGAAAG AAAAAAGTTG	GA..AAGATT TTGCATTTGT	TGTTGTATAA
P-PvArc4-417775-FL	(SEQ ID NO: 10)		
P-PvArc3-417683-FL	(SEQ ID NO: 9)		
P-Pv-Arc5-FL	(SEQ ID NO: 11)		

Figure 1

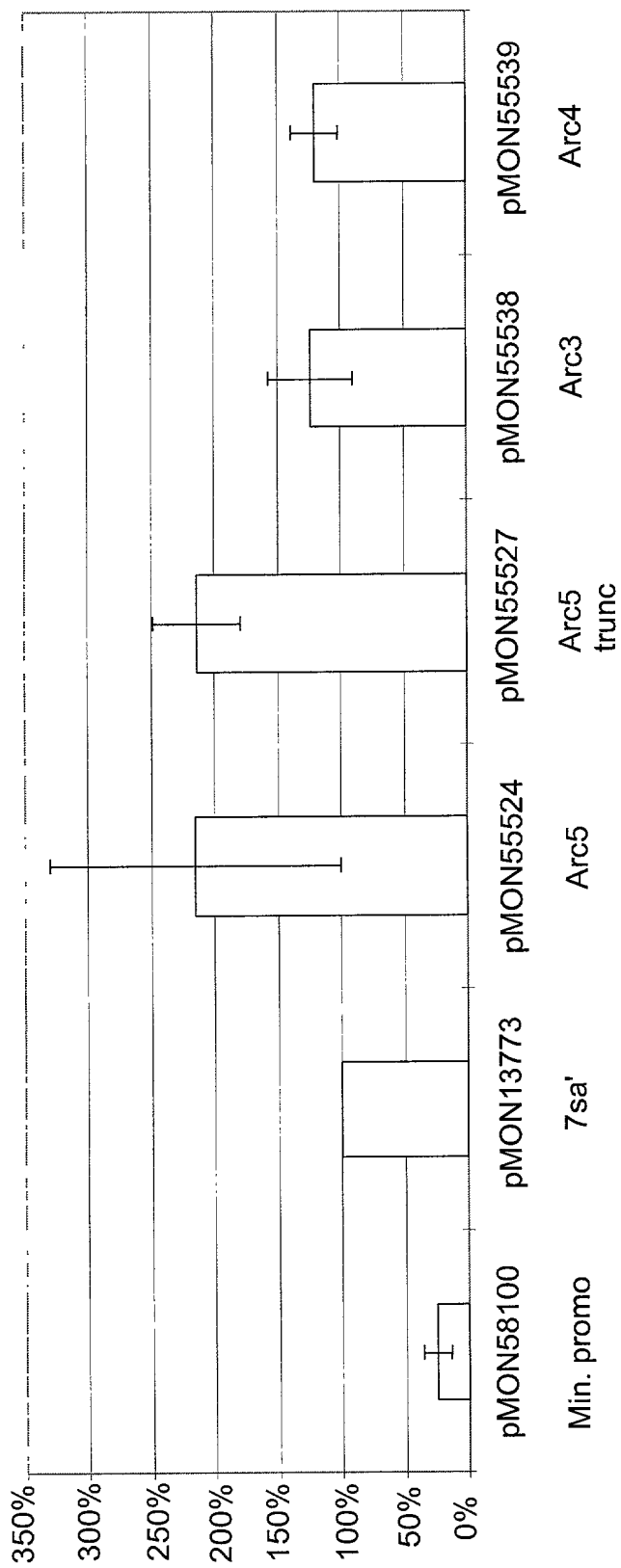


Figure 2

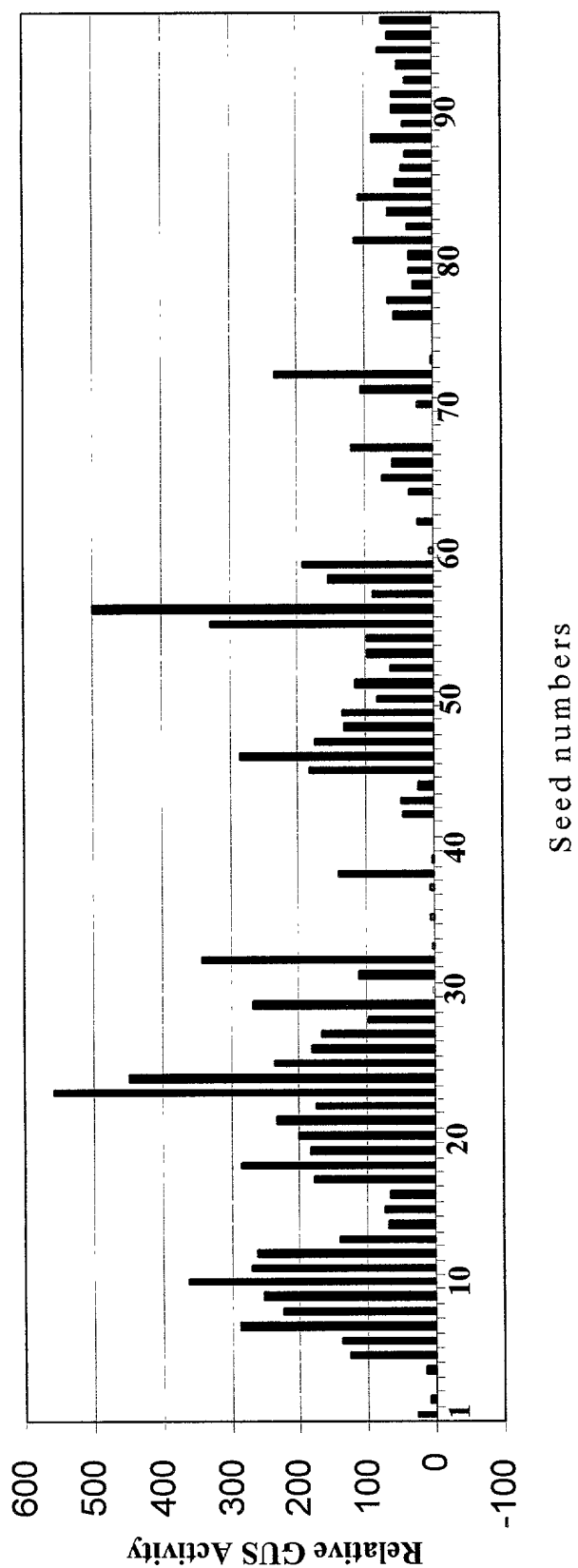


Figure 3

!!NA_MULTIPLE_ALIGNMENT 1.0

PileUp of: @/usr4/people/ppdubo/.seqlab-mendel/pileup_1.list

Symbol comparison table: GenRunData:pileupdna.cmp CompCheck: 6876

pileup_1.msf MSF: 1903 Type: N July 12, 2000 09:15 Check: 8196 ..

Name: P-PvArc4-417775-FL Len: 1903 Check: 2130 Weight: 1.00

Name: P-PvArc3-417683-FL Len: 1903 Check: 8855 Weight: 1.00

Name: P-Pv-Arc5-FL Len: 1903 Check: 7211 Weight: 1.00

```

1
P-PvArc4-417775-FL CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA
P-PvArc3-417683-FL CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA
P-Pv-Arc5-FL CTGCAGTCCT ACATAATTCT TCTACAGTTA ACCTTCAAAT CATATTTTCA

51
P-PvArc4-417775-FL TTATTACAAA ATATCTAGTG TCTCATACGA ATAAATATAT ATTGTTT...
P-PvArc3-417683-FL TTATTACAAA ATATCTAGTA TCTCATACGA ATAAATATAT ATTGTTT...
P-Pv-Arc5-FL TTATTACAAA ATATCTAGTC ATTCATACGA ATAAATATAT ATTTTTTTCa

101
P-PvArc4-417775-FL .CACCTACAA TGATAATATA TTAAAAAGTG AACCTTAAAT GTAATTTTAA
P-PvArc3-417683-FL .CACCTACAA TGATAATATA TTAAAAAGTG AACCTTAAAT GTAATTTTAA
P-Pv-Arc5-FL CATACAATTA TGATAATATA TTAAAAAGTG AACCTTAAAT TTAATTTTAA

151
P-PvArc4-417775-FL CTCATAAAAT CGACTTATAA AATGAGATTT ATACCTACGA TCGATAAAAA
P-PvArc3-417683-FL CTCATAAAAT CGACTTATAA AATGAGATTT ATACCTACGA TCGATAAAAA
P-Pv-Arc5-FL CTTATAAAAT CAACTTATAA AATGAGATTT CTACCTACGA TTAATAAAAA

201
P-PvArc4-417775-FL TAACTTTAAT ATCATATTAA GAAATAAACT TTAAACCTAA CTCAATTTTA
P-PvArc3-417683-FL TAACTTTAAT ATCATATTAA GAAATAAACT TTAAACCTAA CTCAATTTTA
P-Pv-Arc5-FL TAACTTTGAT ATCATATTAA AAAATAAACT TTAAACCTAA CTCAACTTTA

251
P-PvArc4-417775-FL TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT
P-PvArc3-417683-FL TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT
P-Pv-Arc5-FL TAAAACCAAT TTATAAAATA AAATTTACAC TCAGTTATGA ATTATAAAAT

301
P-PvArc4-417775-FL AAAATAGTTT TTAGGTGACG TGAAATCTCC ATCCGATTAA TCAATATTTT
P-PvArc3-417683-FL AAAATAGTTT TTAGGTGACG TGAAATCTCC ATCCGATTAA TCAATATTTT
P-Pv-Arc5-FL GAAATAGTTT TTAGGTGACG TGGAATCTCC ATCCGATTAA TCAATATTTT
```

Figure 4a

	351		400
P-PvArc4-417775-FL	CTGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACA.
P-PvArc3-417683-FL	CTGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACA.
P-Pv-Arc5-FL	ATGATGTTAT	TGTTATTATA	GAAACTAAAA ACATGCCAAA TAATTTACAA
	401		450
P-PvArc4-417775-FL	.....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA CTAATAAAAC
P-PvArc3-417683-FL	.....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA CTAATAAAAC
P-Pv-Arc5-FL	TATATAGATT	CAGTTAAATC	AATTCAGCTT GTCTCCTTGA CTAATAAAAA
	451		500
P-PvArc4-417775-FL	ACAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
P-PvArc3-417683-FL	ACAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
P-Pv-Arc5-FL	AAAACTTTAG	ACTATTATTC	AGATTTACAC TTCATCTCTC ATGATATCCC
	501		550
P-PvArc4-417775-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
P-PvArc3-417683-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
P-Pv-Arc5-FL	TCAAAGTGAA	TTTCATTCAT	GGCACCATT TATATAATCAA CAATTTTAAA
	551		600
P-PvArc4-417775-FL	AAGATGCAAA	TTTGTACTAG	TAAATGCTTC AATGTCCCTG ATAAACACAC
P-PvArc3-417683-FL	AAGATGCAAA	TTTGTACTAG	TAAATGCTTC AATGTCCCTG ATAAACACAC
P-Pv-Arc5-FL	AATATGCAAA	TTTGTACCAG	TAAATGCTTT AATGTCCCTG ATAAACACAA
	601		650
P-PvArc4-417775-FL	ACAAAAAAAC	CTTTTCATAT	TTTTTTCTTA TTAAATAAAG AAATTCATTG
P-PvArc3-417683-FL	ACAAAAAAAC	CTTTTCATAT	TTTTTTCTTA TTAAATAAAG AAATTCATTG
P-Pv-Arc5-FL	AAAAAAA.	.AATTCATAT	TTTTTTCTTA TTAAATAAAG AAGTTCATTG
	651		700
P-PvArc4-417775-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
P-PvArc3-417683-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
P-Pv-Arc5-FL	TAAGAGAAAT	TAGGATCCTT	CAATAGAAAA TGTGTTATTT CCTCATCACC
	701		750
P-PvArc4-417775-FL	AGGAAAAAAA	GGACAACAGT	TAACACAACA AATTTATGTT TCATTTGAGA
P-PvArc3-417683-FL	AGGAAAAAAA	GGACAACAGT	TAACACAACA AATTTATGTT TCATTTGAGA
P-Pv-Arc5-FL	AG..ACAAAG	GGGCAACAGT	TAACAAAACA AATTTATGTT TCATTTGAGA
	751		800
P-PvArc4-417775-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT
P-PvArc3-417683-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT
P-Pv-Arc5-FL	TTAAGGAAGG	TAAGGAAGAA	AAAAGATTAA AAAAAATGTC CTTATCTCTT

Figure 4b

	801		850
P-PvArc4-417775-FL	TGTTTATGCT CTTTTTCGGAA TTAATTAAGT TTTAGTTGTA ATTGTAATAA		
P-PvArc3-417683-FL	TGTTTATGCT CTTTTTCGGAA TTAATTAAGT TTTAGTTGTA ATTGTAATAA		
P-Pv-Arc5-FL	TGTTT..... .CTGTAATAA		
	851		900
P-PvArc4-417775-FL	TAATATAAGA GACTTAACT TTTAATATAA TAATTATAAT TAGGTTTTTTT		
P-PvArc3-417683-FL	TAATATAAGA GACTTAACT TTTAATATAA TAATTATAAT TAGGTTTTTTT		
P-Pv-Arc5-FL	TAATATAAGA GACTTAACT TTTAATATAA TAATTGTAAT TAGG..TTTT		
	901		950
P-PvArc4-417775-FL	TTAGTCACGA GTGTGTATCC TCACCCCTCA CAAACAACAT TTCAAGAAAA		
P-PvArc3-417683-FL	TTAGTCACGA GTGTGTATCC TCACCCCTCA CAAACAACAT TTCAAGAAAA		
P-Pv-Arc5-FL	CTAGTCATGA G..... .CACCCTCA GAGACAAGAT TTCAAGAAAA		
	951		1000
P-PvArc4-417775-FL	CAATTTTGTT AAACATCTTA TTAGAACTT TTAGCAAAGT CTTGAAGTTA		
P-PvArc3-417683-FL	CAATTTTGTT AAACATCTTA TTAGAACTT TTAGCAAAGT CTTGAAGTTA		
P-Pv-Arc5-FL	CAATTTTGTT AAACATCTTA TTAGAACTT TTAGTTAAGT CTTGAAGTTA		
	1001		1050
P-PvArc4-417775-FL	GAATTAAACA AAAAATTTAC ACACACGAGG AACACAATAA ACCTACTATC		
P-PvArc3-417683-FL	GAATTAAACA AAAAATTTAC ACACACGAGG AACACAATAA ACCTACTATC		
P-Pv-Arc5-FL	GAATTAAACA AAAAAAT.T ACACACGAGA AACACAATAA ACCCACTACC		
	1051		1100
P-PvArc4-417775-FL	GTCAGGTTAT CATAAGGATG AAATGTTTTG ATACCATTAA ATATAACACA		
P-PvArc3-417683-FL	GTCAGGTTAT CATAAGGATG AAATGTTTTG ATACCATTAA ATATAACACA		
P-Pv-Arc5-FL	GTCAGGTTAT CATAAGGATG AAATGTTTTG ATATCATTAA ATATAACACA		
	1101		1150
P-PvArc4-417775-FL	CACAAAAATA CATGTAATTA TAACAATACA TGTTATAC.. ATATTTTTGA		
P-PvArc3-417683-FL	CACAAAAATA CATGTAATTA TAACAATACA TGTTATAC.. ATATTTTTGA		
P-Pv-Arc5-FL	CACAAAAATA CATCTAATTA TAACAATATA TGTTATACAT ATATTTTTGT		
	1151		1200
P-PvArc4-417775-FL	AAAAACTTAA AGTTTTTCAA AACATTCTTA ATACATGATT AGAGCTTATA		
P-PvArc3-417683-FL	AAAAACTTAA AGTTTTTCAA AACATTCTTA ATACATGATT AGAGCTTATA		
P-Pv-Arc5-FL	AAAAACTTAG AGTTTTTCAA AACATTC.TA ATACATGATT AGAGTTTATA		
	1201		1250
P-PvArc4-417775-FL	GAAATACAAA TATTTAAAAA ATATAACTTT AAAAAACAT CTTAAAGTC.		
P-PvArc3-417683-FL	GAAATACAAA TATTTAAAAA ATATAACTTT AAAAAACAT CTTAAAGTC.		
P-Pv-Arc5-FL	GAAATACAAA TATTTAAAAA ATATAATTTT AAAAAACAT TCTAAAGTCA		

Figure 4c

	1251		1300
P-PvArc4-417775-FL	CTCATATCCT CTCACACCGG TGAAATCATT TACTCGTAGT ATAGTACCGT		
P-PvArc3-417683-FL	CTCATATCCT CTCACACCGG TGAAATCATT TACTCGTAGT ATAGTACCGT		
P-Pv-Arc5-FL	TTCAGATCCT CTCACACCTG TGTGATCATT TAGTCAT.GT ATGTAGTACA		
	1301		1350
P-PvArc4-417775-FL	GTCATAATAG TTCACAACAC AGTAAAAAGA ATAAGAATAA ACTAGTGAAT		
P-PvArc3-417683-FL	GTCATAATAG TTCACAACAC AGTAAAAAGA ATAAGAATAA ACTAGTGAAT		
P-Pv-Arc5-FL	ATCATTGTAG TTCACAACAG AGTAAAAATAA ATAAGGATAA ACTAGGGAAT		
	1351		1400
P-PvArc4-417775-FL	ATA..... .AAATT TTATAAAAAG GGAAAATCAA ATTAGAATTT		
P-PvArc3-417683-FL	ATA..... .AAATT TTATAAAAAG GGAAAATCAA ATTAGAATTT		
P-Pv-Arc5-FL	ATATATAATA TATACAATTA AATAAAAAG GGAAAATCAA ATTAGAATTT		
	1401		1450
P-PvArc4-417775-FL	TTGATTCCCC ACATAACACA ACTCACCATG CACGCTGCCA CCTCAGCTCC		
P-PvArc3-417683-FL	TTGATTCCCC ACATAACACA ACTCACCATG CACGCTGCCA CCTCAGCTCC		
P-Pv-Arc5-FL	TTGATTCCCC ACATGACACA ACTCACCATG CACGCTGCCA CCTCAGCTCC		
	1451		1500
P-PvArc4-417775-FL	CTCCTCTCCA CACATGTCTC ATGTCACTTT CGACTTTGGC TTTTTCAC TA		
P-PvArc3-417683-FL	CTCCTCTCCA CACATGTCTC ATGTCACTTT CGACTTTGGC TTTTTCAC TA		
P-Pv-Arc5-FL	CTCCTCTCCA CACATGTCTC ATGTCACTTT CGACTTTGGC TTTTTCAC TA		
	1501		1550
P-PvArc4-417775-FL	GGAGACAAC TCGCCATGCAC GCTGCCACGT CAGCTCCTTC CTCTTCCCAT		
P-PvArc3-417683-FL	GGAGACAAC TCGCCATGCAC GCTGCCACGT CAGCTCCTTC CTCTTCCCAT		
P-Pv-Arc5-FL	TGACACAAC TCGCCATGCAT GTTGCCACGT GAGCTCCTTC CTCTTCCCAT		
	1551		1600
P-PvArc4-417775-FL	GATGACACCA CTGGGCATGC ATGATGCCAC CTCAGCTCCC ACCTCTTCTC		
P-PvArc3-417683-FL	GATGACACCA CTGGGCATGC ATGATGCCAC CTCAGCTCCC ACCTCTTCTC		
P-Pv-Arc5-FL	GATGACACCA CTGGGCATGC ATGCTGCCAC CTCAGCTCCC ACCTCTTCTC		
	1601		1650
P-PvArc4-417775-FL	ATTATGAGCC TACTGGCCAT GCACACTGCC ACCTCAGCAC TCCTCTCACT		
P-PvArc3-417683-FL	ATTATGAGCC TACTGGCCAT GCACACTGCC ACCTCAGCAC TCCTCTCACT		
P-Pv-Arc5-FL	ATTATGAGCC TACTGGCCAT GCACACTGCC ACCTCAGCAC TCCTCTCACT		
	1651		1700
P-PvArc4-417775-FL	TCCCATTGCT ACCTGCCAAA CCGCTTCTCT CTATAAATAT CTCTTTAAAT		
P-PvArc3-417683-FL	TCCCATTGCT ACCTGCCAAA CCGCTTCTCT CTATAAATAT CTCTTTAAAT		
P-Pv-Arc5-FL	TCCCATTGCT ACCTGCCAAA CCGCTTCTCT CCATAAATAT CTATTTAAAT		

Figure 4d

	1701				1750
P-PvArc4-417775-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
P-PvArc3-417683-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
P-Pv-Arc5-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
	1751				1800
P-PvArc4-417775-FL	CGTTGTTTTGT	TAATTGTTAA	TTTTATATTA	TTATTTCTCC	CTCAAATAAT
P-PvArc3-417683-FL	CGTTGTTTTGT	TAATTGTTAA	TTTTATATTA	TTATTTCTCC	CTCAAATAAT
P-Pv-Arc5-FL	CGTTGTTTAA	TAATTGTTAA	TTTGGAGTT.	.....	...GAATAAT
	1801				1850
P-PvArc4-417775-FL	ATTATAAAAG	ATAATGATTC	.....GATT	TTGCATTTGT	TGTTGTATAA
P-PvArc3-417683-FL	ATTATAAAAG	ATAATGATTC	GATTTTGATT	TTGCATTTGT	TGTTGTATAA
P-Pv-Arc5-FL	AAAATGAAAG	AAAAAAGTTG	GA..AAGATT	TTGCATTTGT	TGTTGTATAA
	1851				1900
P-PvArc4-417775-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
P-PvArc3-417683-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
P-Pv-Arc5-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
	1901				
P-PvArc4-417775-FL	TGG	(SEQ ID NO: 13)			
P-PvArc3-417683-FL	TGG	(SEQ ID NO: 12)			
P-Pv-Arc5-FL	TGG	(SEQ ID NO: 14)			

Figure 4e

	Promoter	5' UTR	Coding sequence	3' terminator
pMON55534	tARC5	ARC5	GUS	ADR12
pMON55535	tARC5	ARC5	GUS	E9
pMON55540	tARC5	GmHSP17.9	GUS	E9
pMON55569	tARC5	GmdSSU	GUS	E9
pMON55570	tARC5	PetHSP70	GUS	E9
pMON55575	tARC5	ARC5	GUS	Arc5

Figure 5

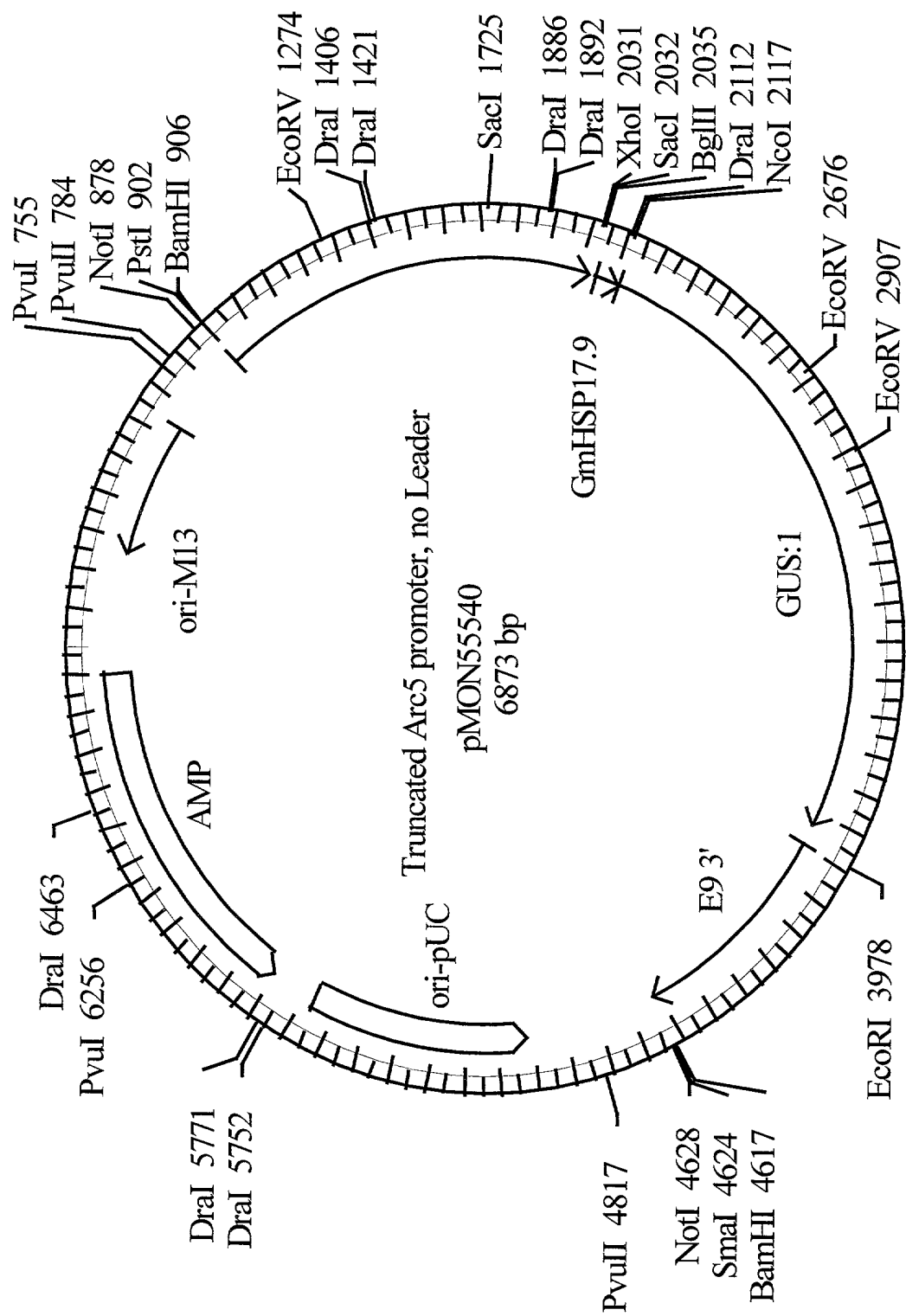


Figure 6

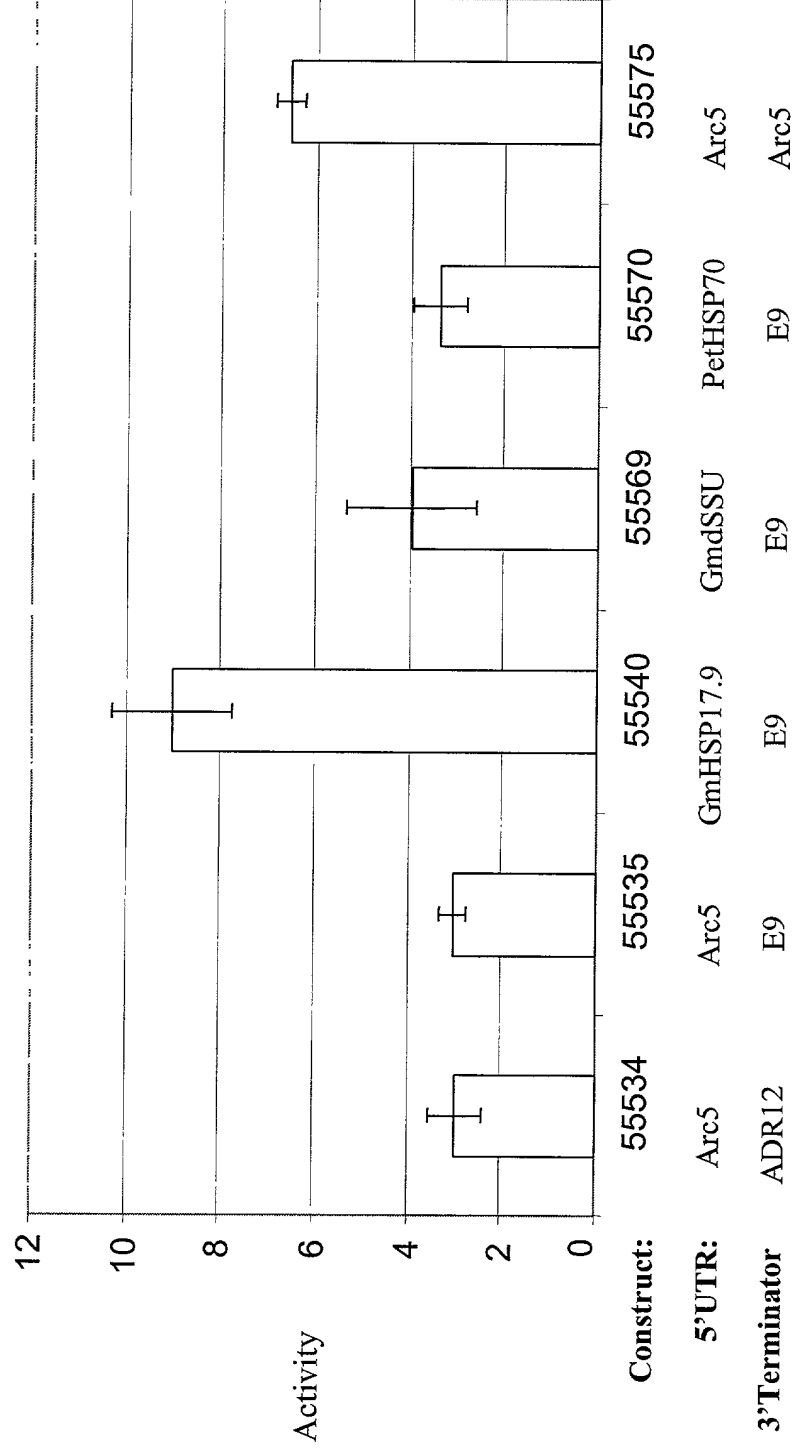


Figure 7